

IN THE CLAIMS

1. (currently amended) A method of producing a metal mesoporphyrin ~~halide~~ compound comprising: isolating a mesoporphyrin formate; and converting the mesoporphyrin formate to a metal mesoporphyrin ~~halide~~ compound.

2. (currently amended) The method of claim 1, wherein the mesoporphyrin formate is converted directly to ~~a~~ the metal mesoporphyrin ~~halide~~ compound.

3. (currently amended) The method of claim 1, wherein the mesoporphyrin formate is first converted to mesoporphyrin dihydrochloride and the mesoporphyrin dihydrochloride is converted to the metal mesoporphyrin ~~halide~~ compound.

4. (currently amended) The method of claim 3, wherein the mesoporphyrin dihydrochloride is reacted with an insert ~~metals~~ metal to form the metal mesoporphyrin ~~halide~~ compound.

5. (previously presented) The method of claim 3, further comprising purifying the mesoporphyrin formate in the presence of a metal scavenger.

6. (previously presented) The method of claim 5, wherein the metal scavenger includes Si-thiol.

7. (previously presented) The method of claim 4, further comprising catalytically hydrogenating hemin in the presence of an acid to form the mesoporphyrin formate.

8. (previously presented) The method of claim 7, wherein the step of catalytically hydrogenating the hemin occurs in two steps.

9. (previously presented) The method of claim 8, further comprising heating a mixture of hemin and a hydrogenation catalyst under pressure at a first temperature for

a first period of time and subjecting the mixture to a second temperature under pressure for a second period of time.

10. (previously presented) The method of claim 9, wherein the first temperature is higher than the second temperature.

11. (currently amended) The method of claim 1, wherein the metal mesoporphyrin ~~halide~~ compound is a ~~tin~~ metal mesoporphyrin halide.

12. (currently amended) The ~~process~~ method of claim 10, further comprising:
a) subjecting a reaction mixture of hemin and a hydrogenation catalyst in an acid to hydrogen pressure of about 30-65 psi and then raising the temperature to about 85-95° C and maintaining the temperature within that range for a period of about 1-3 hours; b) subjecting the reaction mixture to a further hydrogen pressure of about 30-65 psi at a temperature range of about 45-50° C for a period of about 24-48 hours; and c) recovering the ~~formate salt of~~ mesoporphyrin ~~IX~~ formate from the reaction mixture by precipitation of the mixture with a solvent.

13. (currently amended) The ~~process~~ method of claim 7, wherein the acid is formic acid.

14. (currently amended) The ~~process~~ method of claim 12, wherein the solvent is an ether.

15. (currently amended) The ~~process~~ method of claim 14, wherein the solvent is methyl tert-butyl ether.

16. (currently amended) The ~~process~~ method of claim 15, wherein the hydrogenation catalyst is palladium on carbon.

17. (currently amended) The method of claim 1, wherein the quantity of metal mesoporphyrin ~~halide~~ compound formed by a single performance of the process method exceeds 0.1 kg.

18. (currently amended) The method of claim 1, further comprising purifying the metal mesoporphyrin ~~halide~~ compound, including: a) dissolving the metal mesoporphyrin ~~halide~~ compound in an aqueous basic solution to obtain a dissolved metal mesoporphyrin ~~halide~~ compound; b) treating said dissolved metal mesoporphyrin ~~halide~~ compound with charcoal to obtain a treated metal mesoporphyrin ~~halide~~ compound; c) adding said treated metal mesoporphyrin ~~halide~~ compound to a first aqueous acid solution to obtain a precipitated metal mesoporphyrin ~~halide~~ compound; d) triturating said precipitated metal mesoporphyrin ~~halide~~ compound in a second aqueous acid solution at elevated temperature to obtain a substantially pure metal mesoporphyrin ~~halide~~ compound; and e) drying said substantially pure metal mesoporphyrin ~~halide~~ compound.

19. (currently amended) The ~~process method~~ process method of claim 18, wherein the metal mesoporphyrin ~~halide~~ compound is mesoporphyrin IX ~~chloride~~ dihydrochloride.

20.-24. (canceled).

25. (new) The method of claim 19, further comprising reacting the mesoporphyrin IX dihydrochloride with tin to form tin V mesoporphyrin IX dichloride.

26. (new) The method of claim 1, wherein the mesoporphyrin formate is isolated in substantially pure, solid form.

27. (new) The method of claim 26, wherein the mesoporphyrin compound is mesoporphyrin IX dihydrochloride.

28. (new) The method of claim 27, further comprising reacting the mesoporphyrin IX dihydrochloride with tin to form tin (IV) mesoporphyrin IX dichloride.

29. (new) The method of claim 28, wherein the quantity of tin (IV) mesoporphyrin dichloride formed by a single performance of the method exceeds multiple kilograms.

30. (new) The method of claim 28, further comprising purifying the mesoporphyrin formate with a metal scavenger.

31. (new) The method of claim 20, wherein the metal scavenger includes a silica bound metal scavenger.

32. (new) The method of claim 28, further comprising purifying the tin (IV) mesoporphyrin IX dichloride includes trituration in hot acid at an elevated temperature.

33. (new) The method of claim 32, wherein the acid is HCl.

34. (new) The method of claim 11, wherein the metal mesoporphyrin halide is mesoporphyrin IX dihydrochloride.

35. (new) The method of claim 18, wherein the metal mesoporphyrin compound is a metal mesoporphyrin halide.

36. (new) The method of claim 4, wherein the mesoporphyrin dihydrochloride is reacted with the insert metal in the absence of any acetate ions.

37. (new) The method of claim 28, wherein the mesoporphyrin dihydrochloride is reacted with the tin insert metal in the absence of any acetate ions.

38. (new) The method of claim 17, wherein the quantity of metal mesoporphyrin compound formed by a single performance of the method exceeds 1 kg.

39. (new) The method of claim 18, wherein the quantity of metal mesoporphyrin compound formed by a single performance of the method exceeds 1 kg.

40. (new) The method of claim 28, wherein the quantity of tin (IV) mesoporphyrin IX dichloride formed by a single performance of the method exceeds 1 kg.

41. (new) Tin (IV) mesoporphyrin IX dichloride produced by a single performance of the method of claim 28.